



Safety is Our DNA

Having roots in the aircraft industry, the Subaru Group considers safety to be the most important feature underpinning automobiles. Since Subaru launched the Subaru 360 over a half-century ago to this day, Subaru has engaged in automotive manufacturing with a philosophy of “All-Around Safety” and maximum emphasis on safety performance.

SINCE 1917

Ensuring Safety for Pilots

Our DNA of safety is inherited from aircraft development.

At the core of Subaru’s safety development expertise lies traits acquired from developing aircrafts. Given the lethal ramifications of a crash, aircraft development requires designs that consider all possible emergency situations, hence the implementation of ideas and countermeasures within the aircraft’s basic structure to prevent the onset of danger. In addition, one of the indispensable safety features of smaller aircrafts is the ability for the pilot to be able to secure an all-around unobstructed line of sight. This approach to safety has not diminished even after Subaru moved into automobile manufacturing. Since Subaru released the Subaru 360, all of our vehicles have been developed with an emphasis on safety features, starting with unobstructed visibility.

SINCE 1960

Ensuring Safety for Drivers



Subaru 360

Going ahead of the times

Developing a vehicle body for collision safety based on All-Around Safety

Subaru 360, launched in 1958, had played an important role in expanding the popularization of automobiles during the period of high economic development. Since that period, Subaru has dedicated itself to developing vehicle bodies for collision safety following the principle of All-Around Safety—effectively absorbing shock from collisions in all directions and protecting passengers with a cabin structure of robust strength.

Early on, safety was not yet emphasized as part of the value of vehicles and there were no crash test dummies in existence. Subaru’s development team, however, pushed forward independent research on car body structure and how it affects human body. Through trial and error, Subaru pursued superior collision safety technologies ahead of the times.

Horizontally-opposed engine and AWD Developing proprietary technologies for enhanced driving safety

Fundamental automobile performance in terms of driving, turning, and braking differs depending on the vehicle's structure. In particular, the location of the center of gravity and the type of drive train have a significant effect. The lower the center of gravity is, the more stable the cornering would be, while a drive train that delivers power to all of the wheels gives constant stability when driving. This is the perspective that led Subaru, in 1966, to launch the Subaru 1000—a FWD vehicle with a horizontally-opposed engine—and, in 1972, the 4WD Subaru Leone. Since that time, Subaru has further honed our proprietary technologies and continued to pursue safe and stable driving performance.



Launching our flagship Legacy Embarking on development of driving support systems.

Our flagship Legacy model, launched in 1989, demonstrated both reliable driving performance and mechanical endurance when it set a world speed record in January of that same year for 100,000 km of continuous driving. Furthermore, around this period, Subaru started development of a driving support system using stereo cameras. In 1999, Subaru commercialized ADA, Active Driving Assist, which was the predecessor of our current EyeSight technology.

Commercialized EyeSight. Equipped vehicles with new driving assist function

In 2008, Subaru commercialized our EyeSight technology with stereo cameras constantly surveying the area forward of the vehicle, and warnings and pre-crash braking functions for preventing accidents or mitigating damage from accidents.



In 2017, Subaru introduced an updated version of EyeSight that features the new driving Assist function. This extends the minimum speed at which EyeSight's Lane Keep Assist function operates from 60 km/h to 0 km/h. It also adds automated steering that follows the preceding vehicle in the same lane, teamed with Adaptive Cruise Control to assist drivers with automated control of acceleration, braking, and steering on expressways, greatly reducing driver burden.

The Subaru Global Platform, the new platform introduced in 2016, dramatically enhances vehicle body strength by "optimization of frame structure," "diversification of load transmission paths," "expansion of high-strength material usage" in addition to "improvement in vehicle body and chassis rigidity," and improves the energy absorption rate at the time of impact by about 40% over previous models. Beginning with Impreza launched in 2016, Subaru has equipped XV with this Subaru Global Platform in 2017 and Subaru plans to continue expanding the models with this in the future.

INTO THE FUTURE

Working toward Achieving A Safer Society

Subaru's Approach to the Future of Safety

Attaching particular importance to protecting lives, Subaru will work to achieve the target of zero fatal road accidents* in 2030. Subaru's intention does not lie in changing everything automatic, but in "Respect what humans are good at and leave what humans are not good at to automobiles for safe transportation." With this idea, Subaru further strives to polish our driver assist technology and to enhance our collision safety performance.

Subaru will also improve safety and peace of mind through "overall safety," "artificial intelligence technology," and "connecting technology."

* Reducing to zero the number of fatal accidents occurring while a driver or passenger in a Subaru automobile, and the number of fatalities among pedestrians, cyclists, and the like arising from collisions with a Subaru vehicle.

Our Approach to Making Safe Vehicles

Subaru conducted a survey of the number of personal accidents by Subaru vehicles sold within Japan from FYE2011 to FYE2015. The results showed that vehicles with the EyeSight Driver Assist Technology (version 2) had about 80% fewer rear-end collision accidents and about 50% fewer pedestrian accidents compared to vehicles without EyeSight per 10,000 vehicles, and about 60% fewer accidents in the survey overall.

* For this survey, Subaru based our independent calculations on data from the Institute for Traffic Accident Research and Data Analysis (ITARDA). The occurrences of personal accidents by EyeSight (version 2) available models of Subaru vehicles that were sold in Japan from FYE2011 to FYE2015 (246,139 units had EyeSight (version 2) installed; 48,085 did not) were categorized in the survey.

Thoughts on Primary Safety

Automobile safety technology is evolving on various fronts. The ideal is that no danger should be encountered, and the basis of this is for drivers to make correct judgment and operation.

Primary Safety is based on an approach that enhances safety through initial and basic design techniques for the automobile form and interface. To realize safe, concentrated driving without distraction, Subaru pays meticulous attention to details of the instrument panel and seat design, including visibility design.

Related information

› [Subaru's automobile manufacturing](#)>TECHNOLOGY: Safety>Primary Safety 

Thoughts on Active Safety

Active Safety is an approach to safety based on preventing accidents, assuming that accidents may occur. In the event of an accident, for safe avoidance it is important to maintain vehicle stability no different from normal, under a variety of weather and road conditions.

Based on the idea that the ultimate drive fosters safety, Subaru puts the exceptional fundamental performance delivered by our horizontally-opposed BOXER engine and Symmetrical All-Wheel Drive as the basis for refinement of vehicle performance that enables users to drive with confidence in any kinds of environment and climate.



Horizontally-opposed engine



Symmetrical All-Wheel Drive

Related information

› [Subaru's automobile manufacturing](#)>TECHNOLOGY: Safety>Active Safety 

Thoughts on Pre-crash Safety

Pre-crash Safety is an approach that assists driver's driving operations and predicts hazards with the aim of helping reduce damage in the event of a collision.

Subaru, quick to introduce the idea of pre-crash safety, has proceeded with the development of EyeSight. It (Ver.2) adopts a stereo camera for judging conditions in front of the vehicle as well as linkage to the engine, transmission and brakes for hazard avoidance, and has been highly evaluated as an advanced driving support system. Levorg, WRX, Legacy, Impreza, XV, and Forester are now equipped with the new EyeSight (Ver.3), and Subaru is working to increase the models fitted with the system.

Related information

› [Subaru's automobile manufacturing](#)>[TECHNOLOGY: Safety](#)>[Preventive Safety](#) 

Thoughts on Passive Safety

Passive Safety is an approach to safety technology that aims to minimize damage in the event of an accident. Subaru has promoted development considering safety in all aspects of a vehicle. With an original crash safety body featuring a new Ring-Shaped Reinforcement Frame Body Structure, and engine layout, etc., for mitigating collision impact on vehicle occupants, cabin occupants are, of course, protected. But Subaru also considers collision with pedestrians in its safety system, for which it is highly acclaimed, not only in Japan but also throughout the world.

Furthermore, with the next generation platform “Subaru Global Platform,” Subaru has achieved greater passive safety capability by increasing the amount of energy absorbed at the time of impact by a factor of 1.4 over past systems.

Beginning with Impreza launched in 2016, Subaru has equipped XV with this Subaru Global Platform in 2017 and Subaru plans to continue expanding the models with this in the future.



Image of Impreza JNCAP* Frontal Offset Crash Test
Source: National Agency for Automotive Safety & Victims' Aid

* JNCAP: Japan New Car Assessment Program: testing and assessment of vehicle safety performance conducted by the Ministry of Land, Infrastructure, and Transport (MLIT) together with the National Agency for Automotive Safety & Victims' Aid (NASVA).

Related information

› [Subaru's automobile manufacturing](#)>[TECHNOLOGY: Safety](#)>[Passive Safety](#) 

FYE2018 Car Assessment Results

Subaru undergoes safety performance testing and assessment of public organizations in and out of Japan including JNCAP in Japan, IIHS*¹ in the U.S., EuroNCAP*² in Europe, and ANCAP*³ in Australia, and have gained the highest rank of assessment in most of them.

In FYE2018, Levorg and WRX received high scores in the Lane Departure Prevention Device, etc. Evaluation, a new evaluation in the JNCAP preventive safety performance evaluation, and received the highest score of “Preventive Safety Performance Evaluation (ASV++)”.

Also in EuroNCAP, Impreza and XV received the “Best in Class Safety Award” among all the models receiving the “Five Star,” the highest recognition in EuroNCAP, in 2017.

*1 IIHS: Insurance Institute for Highway Safety.

*2 EuroNCAP: European New Car Assessment Programme: a program for publishing vehicle safety information conducted in Europe.

*3 ANCAP: The Australian New Car Assessment (ANCAP): an independent organization composed of the transportation authority of Australia and New Zealand that has been providing safety assessments since 1993.

FYE2018 Commendations

Assessed automobiles	Assessment organization	Assessment
Levorg, WRX equipped with EyeSight	 JNCAP, Japan	ASV++
Impreza, XV	 EuroNCAP, Europe	5★ in 2017 2017 Best in Class Safety Award (Small Family Car Class)
Legacy, Outback, Impreza, WRX equipped with EyeSight and high luminance light	 IIHS, USA	2018 TSD+ Award*
XV	 ANCAP, Australia	5★ in 2017

* In its publication of vehicle safety information, the IIHS designates a vehicle as TOP SAFETY PICK (TSP) if it received the rating of “Good” in all test results for the Offset Frontal Test, Small Overlap Front Test (drivers seat), Side Crash Test, Rear Collision (whiplash) Test and Roof Strength Test as well as the rating of “Advanced” or higher in the Front Crash Prevention Test. In addition to these conditions, a vehicle that is rated “Acceptable” or higher in the Small Overlap Front Test (passenger seat), and “Good” or higher in the head light evaluation is awarded TOP SAFETY PICK CLASS (TSP+).